Utilisation of reproductive health services in rural Vietnam; are there equal opportunities to plan and protect pregnancies?

NV Toan, HT Hoa, PV Trong, B Höjer, LÅ Persson, K Sundström

Abstract

Study objectives **- To describe the utilisation of reproductive health services (family planning, antenatal care, and delivery services) and the socioeconomic determinants for utilisation of health services.**

Design **- This was a cross sectional survey, using a multistage sampling technique.**

Setting **- Tien Hai district, Thai Binh Province, Vietnam. Altogether 1132 mothers with children under 5 years of age were interviewed about antenatal, delivery, and family planning services utilisation during a five year period (1987-92).**

Main results **- Seventy per cent of the women used contraceptive methods, with the intrauterine device being the most common. The use of the intrauterine device was positively associated with the number of children alive but not with other sociodemographic factors in the mothers. Thirty per cent of the women had attended an antenatal clinic for check ups during their last pregnancy. It was found that mothers with fewer deliveries, higher education, and who were Buddhist or of no religion had utilised antenatal services more frequently than the others. Seventy five per cent of the mothers in this study had been assisted by health professionals at their last delivery. Those mothers with fewer deliveries, higher education, who were Buddhist or had no religion, and had sufficient to eat were more likely to have their births attended by health professionals.**

Conclusions **- In spite of a relatively high education level in the population and services which are generally available, there was an under utilisation of antenatal and delivery care and there was no equal opportunity for different groups of mothers to use these services. Family planning services were, however, frequently used and were used to the same extent by different groups of mothers. Except for abortion, alternatives to the intrauterine device method were rarely available. If pregnancies are to be protected in an efficient way in rural Vietnam, reproductive health care must be strengthened and efforts should be made to reach the women who are not using these services at present.**

(*J Epidemiol Community Health* 1996;**50**:451–455)

Department of Environment, Hygiene and Epidemiology, Hanoi School of Medicine, Hanoi, Vietnam.
NV Toan
HT Hoa

Department of Hygiene and Epidemiology, Thai Binh Medical College, Thai Binh, Vietnam.
PVTrong

Department of Public Health Sciences, Division of International Health Care Research (IHCAR), Karolinska Institutet, S-171 77 Stockholm, Sweden.
B Höjer
K Sundström

Department of Epidemiology and Public Health, Umeå University, Umeå, Sweden.
L Å Persson

Correspondence to:
Dr NV Toan, c/o Dr B Höjer, Department of Public Health Services, Division of International Health Care Research (IHCAR), Karolinska Institute, S-171 77 Stockholm, Sweden.

Accepted for publication March 1996

Vietnam is well known for its efforts to establish equal access to health services for different areas and groups of the population.[1] The commune health station (CHS) is the basic unit in the Vietnamese primary health care system. The CHSs, which previously cooperated with brigade nurses in the villages, are supported by a district health centre (hospital and preventive services).

Concern about rapid population growth prompted the government of northern Vietnam to introduce a national family planning programme in 1963, and this was followed by several decisions promoting family planning activities. The birth rate fell only slightly in the next few decades, and in 1988 a population and family planning policy was introduced.[2] Its goal was to reinforce and strengthen measures to reduce population growth and to ensure that adequate family planning methods were available to and used by the population. The National Committee for Population and Family Planning, the ministries, and the people's committees of the provinces and municipalities were charged with the responsibility for monitoring and supporting measures to control population growth. The family planning services were generally introduced at the commune health level, but the programme as a whole was implemented with varying vigour in different areas. In some areas, penalties in the form of higher fees for health services or the payment of a certain amount of rice or money to the commune were introduced for giving birth to more than two children. In 1989, the total fertility rate was still reported to be high, at 4.0, while the official estimate of the infant mortality rate was relatively low, at approximately 45 per 1000.[3–5]

During the 1980s, a number of decisions were made by the Ministry of Health in order to improve health care for pregnant women and their newborn babies. It was decided that pregnant women should be offered at least three antenatal clinic visits and receive two anti-tetanus vaccinations. However, the implementation of these decisions varied in different areas. In 1993, according to official statistics,[6] 21% of all pregnant women in the country received three or more antenatal check ups and 48% were fully immunised against tetanus.

There is growing awareness that the current transition to a market economy system may create inequalities between different groups in Vietnamese society. The reason is that the market oriented system, introduced in 1989,

Table 1 Current use of family planning method (% users). Data from 1130 Vietnamese mothers with children under 5 years of age in relation to number of children alive in Tien Hai District, Thai Binh Province, 1992

Methods used	1 child (n=305)	2 children (n=307)	3 + children (n=518)	Total (n=1130)
Intrauterine device	29.8	66.8	77.2	61.6
Condom	0.7	0.3	0.4	0.4
Pill	0.0	0.0	0.2	0.1
Female sterilisation	0.0	0.0	0.6	0.3
Male sterilisation	0.0	0.0	0.2	0.1
Rhythm/withdrawal	9.2	5.9	6.3	7.0
Other	1.0	0.3	0.2	0.4
No method	59.3	26.4	14.9	30.0

leads to considerably increased costs for the patient, who has to pay for health services and drugs. Private services are now available, while at the same time there has been a reduction of staff within the public services. Although the process had hardly reached the rural areas by 1992, these changes are also expected to influence the family planning services and the maternal and child health care.[5]

The Thai Binh Province in the Red River Delta, a traditional farming area, has about 1.8 million inhabitants (1993), and the population density is one of the highest in the country,[3] at 1065 per km^2. Most people belong to the major ethnic group in Vietnam, *Kinh*, and they earn their living from farming, fishing, and the production of salt. The predominant religion is Buddhism, but the Catholic influence is also strong. There is a network of CHSs, each headed by an assistant doctor. The health services have faced serious resource constraints during the past few years and very little foreign aid has reached the province. An active family planning programme has been launched.

The aims of the present study were to describe the utilisation of reproductive health services (family planning, antenatal care, delivery services) and to study some socioeconomic determinants of care utilisation in a rural area in the Red River Delta in Vietnam.

Methods

This study was part of a household survey carried out in the Tien Hai District, one of eight districts in the Thai Binh Province. In Tien Hai (population 194 000) there are 35 communes engaged in rice growing, fishing as well as some mixed production based on agriculture, and salt making. In each one of the communes there is a small CHS offering preventive as well as curative services. It is staffed by an assistant physician, a midwife, and a nurse. According to the local authorities, the demographic, social, and economic conditions, as well as the health services, were considered to be average in relation to other districts in the province.

The sample was selected by the use of a multistage cluster sampling technique in order to represent households with children under 5 years of age. In the first step, the district authorities classified the communes as farming, fishing/salt producing, or mixed communes. Based on the total population in each of the categories 3 + 1 + 1, communes were selected by random. In a second stage, a number of villages in each commune were randomly selected, proportional to the size of the population in the communes. After choosing a random starting point, a number of families, proportional in size to the population of each village, was selected for inclusion in the sample. Altogether, 1120 households and 1132 mothers were included in this study.

The women were interviewed in their homes by medical staff from the Thai Binh Medical College and the Hanoi School of Medicine. The field work was performed in March to April 1992. A questionnaire had been pretested and revised, and the interviewers were trained to perform the interview in a standardised manner. The questionnaire included a sociodemographic characterisation as well as questions on the reproductive life of the women interviewed.

The current use of family planning methods, if any, was registered. Mothers were asked about antenatal check ups received during their latest pregnancy. Place of delivery and any assistance received at the latest delivery were also recorded.

Literacy was defined as the ability to read and write, disregarding any formal education. Formal education was classified as primary, secondary, or higher education. Mother's occupation was classified as farmer or non-farmer; the latter category included employed workers, those engaged in fishing, and others.

In the questionnaire, the mother's religion could be classified as Catholic, Buddhist, or no religion. The last group included those who

Table 2 The use of intrauterine device (IUD) by women in Tien Hai District, Thai Binh Province, 1992, in relation to demographic and social background factors. Data from 1132 Vietnamese women with children under 5 years of age. The odds ratio (OR) for use of IUD is given for each factor as well as after adjustment for the number of children alive according to the Mantel-Haenszel statistic

		Use of IUD					
Factors	Level	Yes	No	OR	(95% CI)	OR*	(95%CI)
No of children alive	1	91	214	1			
	2	206	101	4.80	(3.36, 6.85)		
	3 +	400	118	7.97	(5.72, 11.12)		
Mother's age	< 25	137	194	1		1	
	25 +	553	237	3.29	(2.53, 4.27)	1.08	(0.75, 1.56)
Mother's education	No formal	221	93	1		1	
	Formal	469	337	0.59	(0.44, 0.77)	0.90	(0.66, 1.24)
Mother's occupation	Farmer	617	368	1		1	
	Non-farmer	74	63	0.70	(0.49, 1.00)	0.97	(0.67, 1.41)
Mother's religion	Buddhist/no religion	355	188	1		1	
	Catholic	342	246	0.73	(0.57, 0.93)	1.06	(0.81, 1.39)

* Mantel-Haenszel.

Table 3 Utilisation of antenatal health services and anti-tetanus vaccination during last pregnancy (%) related to the past number of pregnancies. Data from 1132 Vietnamese women with children under 5 years of age in Tien Hai District, Thai Binh Province, 1992

	Pregnancy 1 (n=242)	*Pregnancy 2 (n=258)*	*Pregnancy 3 + (n=583)*	*Total (n=1083)*
Antenatal care:				
No check up	52	68	79	70
1-2 checks	36	26	19	25
3 checks	12	6	2	5
Anti-tetanus:				
No vaccination	68	72	88	80
1 dose	11	9	5	7
2 doses	21	19	7	13

had traditional beliefs. During the interviews it became obvious that many women classified households where Buddhist traditions were obviously adhered to, as "non-religious". Therefore, only two categories were used in the analysis: Catholic and Buddhist/non-religious.

Food availability was expressed as a dichotomous variable; one group comprised those with insufficient food and another those with sufficient food during the past 12 months.

In the analyses of use of contraceptives, the mean age of having the second child - 25 years - was used as the cut off point for the mother's age.

STATISTICAL ANALYSIS

The quality of interview data was checked by a fieldwork supervisor on a daily basis. Data on some background factors were missing for 11 of the 1132 mothers. Data were processed by use of the *EpiInfo* software.[7] Analysis of odds ratios was performed for the social economic determinants of intrauterine device (IUD) use, antenatal service attendance, and birth attendance by professionals. Stratified analysis of odds ratios and adjustment according to Mantel-Haenszel were made when appropriate by the use of *Quest* software.[8]

Results

Sixty two per cent of the mothers were using family planning methods in the form of IUDs (table 1). Other contraceptive methods were used only by a minority of the mothers, and were rarely available or offered by the health services. Sample selection method meant that all the mothers had a child under 5 years of age; mothers had gone through 1 to 11 pregnancies, and had on average 2.7 live children. During the five years before the study (1987-92), the women had experienced 1662 pregnancies, of which 91% had resulted in a delivery, 4% in a miscarriage, and 5% in an induced abortion. Most of these abortions had been performed during the third pregnancy or later. Few abortions had been performed before 1990-91. Reliable data on the number of abortions during individual years were not available, but from inquiries made to the staff at the CHSs it was obvious that the number of abortions had been increasing continuously in recent years. The current use of IUDs was, as expected, strongly related to the total number of children alive. IUDs were more frequently used by the farming than by the non-farming women, and more frequently by women who were Buddhists or non-religious than by Catholics. However, all these associations with sociodemographic factors disappeared if adjusted for the total number of children alive (table 2).

More than two thirds of the mothers had not attended any antenatal check up during their latest pregnancy and only 13% had received two anti-tetanus vaccinations during that pregnancy (table 3). Those having their first pregnancy were more likely to attend antenatal check ups. Women who were pregnant for the first time also received more anti-tetanus vaccinations. Of those undergoing at least two antenatal checks, 85% had received two anti-tetanus vaccinations.

Attendance at antenatal check ups during the last pregnancy was strongly related to the number of deliveries. Those who had gone through more deliveries attended such check ups less frequently than others (table 4). Attendance at antenatal check ups was also related to the mother's education, occupation, and religion. Antenatal attendance was more frequent among mothers with formal education, non-farming occupation, and Buddhist/no religion than among others. Older mothers were more prone to use antenatal services (when results were adjusted for number of deliveries).

More than one third (37%) of the mothers had had their latest delivery at home (table 5), and a quarter of all deliveries had not been attended by any health professional. Professional attendance at birth was strongly related to the number of deliveries (table 6). Mothers who had had more deliveries were less frequently attended by health professionals, while older mothers were more often attended

Table 4 Attendance at antenatal health services in relation to demographic and social background factors. Data from 1132 Vietnamese women with children under 5 years of age in the Tien Hai District, Thai Binh Province, 1992

		Attendance					
Factors	*Level*	*Yes*	*No*	*OR*	*(95% CI)*	*OR**	*(95%CI)*
No of children alive	1	132	142	1			
	2	84	198	0.46	(0.32, 0.66)		
	3 +	105	422	0.27	(0.19, 0.37)		
Mother's age	< 25	101	178	1		1	
	25 +	216	578	0.66	(0.49, 0.88)	1.70	(1.16, 2.49)
Mother's education	Formal	277	493	1		1	
	No formal	40	263	0.27	(0.19, 0.38)	0.34	(0.23, 0.48)
Mother's occupation	Farmer	240	696	1		1	
	Non-farmer	77	60	3.72	(2.62, 5.29)	3.06	(2.15, 4.35)
Mother's religion	Buddhist/no religion	244	325	1		1	
	Catholic	77	436	0.24	(0.18, 0.31)	0.27	(0.20, 0.36)

*Mantel-Haenszel.

Table 5 Place of delivery and attendance of health professionals in relation to the past number of pregnancies (%). Data from 1132 Vietnamese women with children under 5 years of age in Tien Hai District, Thai Binh Province, 1992

Place of delivery	Professional attending	Pregnancy 1 (n=284)	Pregnancy 2 (n=292)	Pregnancy 3+ (n=556)	Total (n=1132)
Home	No	11	20	35	25
	Yes	8	12	15	12
Commune health centre	Yes	68	59	47	56
Hospital	Yes	13	9	3	7

by them. Mothers with a formal education were more often assisted by a professional, which was also true for Buddhist/non-religious mothers compared with Catholic mothers. There was a relation between religion and educational level of the mothers; 52% of the Catholic mothers had no formal education in comparison with 6% of the others. Mothers in families where there was enough to eat were more often assisted by health professionals at birth than mothers who had not had enough to eat in the previous year. This was true also after adjustment for number of deliveries.

Discussion

These results were based on interviews with Vietnamese women who lived in a rural area in the Red River Delta. The sample did not include women who had no living child or who gave birth to their latest child more than five years before the study. The advocacy of one to two children, emphasised in the 1988 National Population and Family Planning Policy, might have had an impact in this area: in 1989, the population growth rate in the Thai Binh Province was estimated to be 1.8% compared with 2.1% for the whole country.[3] In 1992, the Ministry of Health revealed that the population growth rate was 1.6% in Thai Binh and 2.3% in the whole country.[6] The antenatal care programme, initiated a couple of decades ago, was reinforced in the late 1980s, when it was proposed that each pregnant woman should have at least three antenatal check ups and two anti-tetanus vaccinations. In order to promote antenatal care and attendance of health professionals at the delivery throughout the whole country, a number of proposals were made and activities arranged, but in this province the utilisation of antenatal and delivery care at public health service units did not increase.[6] However, Thai Binh is no exception, as many provinces in Vietnam report similar figures.[9]

The proportion of women who used family planning methods was high compared with other reports from Vietnam.[10-12] This could be related to the selection of women for our study, but it also confirms the observation that family planning activities have been strongly encouraged. This is supported by official statistics showing that the Thai Binh Province had the highest proportion of contraceptive use among married women.[6] Women in the area have expressed worry about side effects of using IUDs.[13] In reality, however, the IUD was the sole alternative offered by the health services to protect women from unwanted pregnancies. According to other observations, the proportion of pregnancies resulting in abortions was steadily increasing during the beginning of the 1990s.[14] Although there may be different explanations for this,[15] the absence of contraceptive choices may be important.[14] This calls for measures to be taken in order to make the services more consumer oriented.

The lack of choice in contraceptive methods is the most obvious obstacle to achieving good quality care. The initial information and interaction between the provider and client is also important, as has been shown in a study from four rural counties in China,[16] which showed that even in settings where several methods are available, poor or inadequate information about selected methods can result in high failure and discontinuation rates. In a household study in East Java,[17] the utilisation of contraceptive methods was explored. The most important determinants of sustained use of family planning methods were whether the initial choice was granted and whether the decision on contraception was agreed between husband and wife.

In this study, we found that only 0.5% used condoms and that only a few male sterilisations were reported. This is consistent with the results of a survey carried out in 1994 in a mountainous area of the country, indicating that the use of condoms and vasectomy was rare.[18] According to a review article on contraceptive methods for men,[19] the lack of male involvement in family planning is partly due to the limited options available, but there may also be reluctance to use these methods.[20] Cur-

Table 6 Attendance by health professional at birth in relation to demographic and social background factors. Data from 1132 Vietnamese women with children under 5 years of age in the Tien Hai District, Thai Binh Province, 1992

Factors	Level	Attendance: Yes	Attendance: No	OR	(95% CI)	OR*	(95%CI)
No of children alive	1	250	33	1			
	2	231	61	0.50	(0.31, 0.81)		
	3 +	362	194	0.25	(0.16, 0.37)		
Mother's age	> 25	234	55	1		1	
	25 +	599	233	0.60	(0.43, 0.85)	1.86	(1.16, 2.98)
Mother's education	No formal	171	142	1		1	
	Formal	662	146	3.77	(2.80, 5.06)	3.06	(2.27, 4.12)
Mother's occupation	Farmer	726	258	1		1	
	Non-farmer	107	30	1.27	(0.81, 1.99)	0.98	(0.64, 1.51)
Mother's religion	Buddhist/no religion	531	57	1		1	
	Catholic	311	231	0.14	(0.10, 0.20)	0.16	(0.12, 0.22)
Food availability	Sufficient	449	85	1		1	
	Insufficient	393	203	0.37	(0.28, 0.29)	0.40	(0.30, 0.54)

*Mantel-Haenszel.

rently, the choices are the coitus-dependent methods, condom or withdrawal, or the permanent anti-contraceptive vasectomy. None of these methods, however, was discussed or actively promoted as an alternative to female contraception in family planning services.

There are few reports on the quality of reproductive health services in Vietnam,[13 21] but those available indicate that an improvement in the quality of services is needed. Since the level of education, particularly among women, in rural Vietnam is high compared with that in other developing countries, one might expect that such actions would increase the utilisation of services.[11] Bruce[22] has defined a number of elements in quality of care. These include choice of methods, information given to the clients, the provider's technical competence, interaction between client and provider, appropriate constellation of services, and mechanisms for follow up and continuity. These aspects should be considered in further studies on the development of reproductive health services in Vietnam.

As pointed out by Diaz and Diaz,[23] the performance of the health workers is highly dependent on their training and working conditions. In the Thai Binh Province, there are midwives at about two thirds of all CHSs, but only one tenth of these are secondary midwives who command the appropriate skills necessary to administer maternal health care.[5] Also, a lack of basic medical equipment, low expenditure on health (US$ 0.5/capita in 1992), and the low salary of commune health workers in the Thai Binh Province[6] (all commune health workers in this area have a low and irregular salary) could be reasons for low utilisation of services.

So, what about the question raised in the title of this article? Our results indicate that there was a high degree of utilisation of IUDs among women, regardless of social background. The most important determinant by far was whether the woman already had two children; certainly a reflection of the population policy. In addition, abortions were mainly reported by women with more than two pregnancies. Apparently, services supporting the population policy have been made universally available.

This is not true, however, for antenatal and delivery care. Women carrying their first child were more likely to use these services, which is satisfactory from a health promotion point of view. On the other hand, the generally low utilisation, particularly among women with a low level of education, insufficient food, and/or Catholic religion, shows that special measures should be taken in order to make adequate antenatal care available to all groups in the community in order to protect pregnancies. This will be particularly important during the continuing introduction of a market oriented economy.

We would like to thank our colleagues in Thai Binh Medical College who collaborated closely in this study, and the Centre for Human Resources for Health which arranged the procedures for the study. This study was funded by the Swedish Agency for Research Co-operation with Developing Countries (SAREC).

1 Kaufman J, Sen G. Population, health and gender in Vietnam: Social policies under the economic reforms. In: Ljunggren B, ed. *The challenge of reforms in Indochina.* Harvard; Harvard University Press, 1993.
2 Council of Ministers. *Decree of 162/1988. Family planning policy.* Hanoi; Council of Ministers, 1988.
3 General Statistics Office. *Vietnam population census, 1989.* Hanoi; General Statistics Office, 1991.
4 Thanh NT, Hong LD, Hoa CV, Tuan T. Preliminary survey of neonatal tetanus mortality rate in Vietnam. *Asia Pac J Public Health* 1990;**4**:271-5.
5 UNICEF. *Children and women in Vietnam: A situation analysis.* Hanoi: UNICEF, 1994.
6 Ministry of Health, *Vietnam: year book 1993.* MoH Planning Unit, 1994.
7 Dean AD, Dean JA, Coulombier D. *EpiInfo. Version 6.* Georgia: Centres for Disease Control and Prevention, 1994.
8 Gustafsson L. Quest. *Statistical and epidemiological analysis.* Umeå:Umeå University, 1987.
9 Swenson IE, Thang NM, Nhan VQ, Thieu PX. Factors related to the utilisation of prenatal care in Vietnam. *J Trop Med Hyg* 1993;**96**:76-85.
10 Allman J, Nhan VQ, Thang NM, San, PB, Man, VD. Fertility and family planning in Vietnam. *Stud Fam Plann* 1991; **22**:308-17.
11 Thang NM, Swenson IE, Man VD, Trinh P. Contraceptive use in Vietnam. The effect of individual and community characteristics. *Contraception* 1992;**45**:409-27.
12 National Committee for Population and Family Planning. *Demographic and health survey, 1989.* Hanoi:National Committee for Population and Family Planning, 1990.
13 Johansson A, Hoa HT, Bich MH, Nham Tuyet LT, Höjer B. Family planning in practice - Vietnamese women's experiences and dilemma. *J Psychosom Obstet Gynecol 1996 (in press).*
14 Tuyet LT, Johansson A, Lap NT. Abortions in two rural communes in Thai Binh province, Vietnam. *Soc Sci Rev* 1994;**39**:73-90.
15 Goodkind D. Abortion in Vietnam - measurement puzzles and concern. *Study Fam Plann* 1994;**25**:342-52.
16 Kaufman J, Zang Z, Qiao X, Zhang Y. The quality of family planning services in rural China. *Stud Fam Plann* 1992;**23**:73-84.
17 Pariani S, Heer DM, Van Arsdol Jr MD. Does choice make a difference to contraceptive use? Evidence from east Java. *Stud Fam Plann* 1991;**22**:384-90.
18 Hanoi School of Medicine. *Changes in socio-economic, demographic and health in Northern mountainous district,* Vietnam. Hanoi; Hanoi School of Medicine, 1994. Mimeograph.
19 Ringheim F. Factors that determine prevalence of use of contraceptive methods for men. *Stud Fam Plann* 1993; **24**:87-99.
20 Tripathy SP, Ramachandran CR, Ramachandran P. Health consequences of vasectomy in India. *Bull WHO* 1994; 72:779-82.
21 Dung VT, Tam NT, Tipping J, Segall M. *Quality of public health services and household health care decision in four rural communes of Quang Ninh Province.* Research report. London; Medical Publishing House, 1995.
22 Bruce J. Fundamental elements of the quality of care: a simple framework. *Stud Fam Plann* 1990;**21**:61-91.
23 Diaz J, Diaz M: Quality of care in family planning in Latin America. *Adv Contracept* 1993;**9**:117-28.